aims to explore how ecosystem services have been integrated into SEA in small islands. This analysis covered the approaches used for assessing ecosystem services, the ecosystem services addressed and the relations between ecosystem services and plan typology. This was achieved through a content analysis of a selected set of SEA reports from the Azores (Portugal) and Orkney (Scotland) islands. Preliminary results showed that this approach to SEA may enhance the effective integration of sustainability issues into decision-making processes of small islands, reduce costs of planning and approval times.

O6.35

A simple model to forecast estuarine morphologic evolution in response to sea level rise

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Estuaries are complex systems, their morphologic evolution depending on hydrodynamic, geomorphologic, sedimentologic, biologic and human-induced factors. This complexity makes the forecasting of morphological responses to sea level rise a challenging task. The focus of this work was to develop a simple model describing long-term estuarine morphological evolution in response to sea level rise. The model rests on the assumption that sedimentation rates depend on the considered morphosedimentary units (channels, flats and saltmarshes) and of immersion times. This model was applied to the Tagus estuary (Portugal) using sedimentation rates deduced from isotopes (^{210}Pb and ^{137}Cs) determined in cored sediment and cartographic comparison. These data supported the development of an analytical function relating sedimentation rate solely with a characteristic depth. Preliminary results are in agreement with the general knowledge of estuarine behaviour: for a sea level rise acceleration scenario, a pronounced reduction in the salt marsh and intertidal flat areas is forecasted, followed by growth of subtidal flats and channels. This model represents a major advance in the ability to forecast long-term estuarine morphologic changes coupled with sea level rise and proved to be a simple but flexible method, with great potential to be used as a supporting tool in estuarine management.

O6.36

Management of estuarine and coastal ecosystems: observatories as effective tools to predict and anticipate changes

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Estuarine and coastal systems are subjected to multiple threats (human-induced or due to climate variability and change) that may reduce their water quality and ecosystems health. Managing these water bodies requires the linking of science and decision-making, based on the integration of our current knowledge of these systems, our predictive capability to simulate various complex processes, and our ability to measure the relevant physical, chemical and biological variables at appropriate temporal and spatial scales. Coastal margin "observatories", which integrate operational modeling systems and real-time monitoring networks, are becoming vital tools to achieve this goal. High-resolution, process-oriented, numerical models combined with data provide the basis to understand the systems natural variability and to predict their response to changes. Implemented in real-time frameworks, these tools allow the continuous evaluation of the system behavior, the anticipation of hazardous situations and the adjustment of existing monitoring strategies.
The effectiveness of these observatories is demonstrated in two Portuguese estuaries: Aveiro lagoon and Tagus estuary. The relative role of climatic factors and anthropogenic interventions in the ecological dynamics of the Aveiro lagoon is evaluated and a pilot surveillance system for early-warning of pollution events (fecal contamination and eutrophication) under operation in the Tagus estuary is presented.

O6.37

The role of Maritime Public Domain for the protection of estuarine waters and banks and associated biodiversity resources, the estuarine area of Ria de Aveiro, Portugal, as a case study

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